REMARKS

Claims 1-25 remain in this application. Claims 19 and 22 have been amended and new claims 23-25 have been added, to eliminate multiple dependency in claims 19 and 22.

Subheadings were included on pages 1, 3 and 10 of the specification to conform this application with U.S. practice. No new matter was added to the specification.

Attached hereto is a marked-up version of the changes made to the Specification and Claims by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

Respectfully submitted,

CAESAR, RIVISE, BERNSTEIN,
COHEN & POKOTILOW, LTD.

May 22, 2001

By _____

Allan H. Fried
Reg. No. 31,253
12th Floor, Seven Penn Center
1635 Market Street
Philadelphia, PA 19103-2212
(215) 567-2010

CERTIFICATE OF MAILING

I hereby certify that the foregoing PRELIMINARY AMENDMENT, re Application Serial No. 09/716,639, is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, this 22nd day of May, 2001.

_____
Allan H. Fried

"Version with markings to show changes made"

NEW BAKER'S YEASTS AND STRAINS FOR THEIR PREPARATION

BACKGROUND OF THE INVENTION

The invention relates to new baker's yeasts or bread-making yeasts. It also relates to strains for the preparation of said baker's yeasts.

In the USA, the trade of frozen doughs, notably of sweet doughs such as frozen doughs intended for bakery products called "Rolls" or for Danish sweet pastries or for similar sweet fermented and baked products is quickly expanding ; however, freezing involves an important stress for the yeast.

In the USA, small breads or fermented pastries are very often aromatized (flavored) with cinnamon ; this spice contains cinnamic acid and cinnamaldehyde ; these chemical compounds can be metabolized by yeasts which leads to the appearance of bad taste and of bad flavors, also called "off-flavors".

Are already known baker's yeasts which are resistant to the stress caused by freezing or deep-freezing and which can be used in frozen doughs without the necessity to increase in an important extent the amount of yeast, increase which is necessary when using conventional baker's yeasts which are not resistant to said stress. Baker's yeasts resistant to freezing have been developed in Europe and in Japan.

Also known are baker's yeasts which can be used without formation of off-flavors, in the manufacture of bakery products comprising cinnamon. Such baker's yeasts, which do not give rise to the appearance of off-flavors in the presence of cinnamon are commonly marketed in the USA.

PRELIMINARY ASPECTS OF THE INVENTION

The new baker's yeasts which the applicants had the merit of having developed have the properties of the two types of baker's yeasts here-above discussed.

These new baker's yeasts are characterized by the fact that :

- they have good general performances in not delayed bread-making processes, i.e. in bread-making processes which do not comprise a freezing or deep freezing step,

conditions when using a control yeast obtained conventionally starting from a control strain such as the strain CNCM I-2412,

- on the other hand by the fact in the above-defined use, the proof time of the said sweet Danish pastry dough, frozen and thawed after at least 100 days, is lower by at least 10 %, preferably by at least 15 % and still more preferably by at least 20 % than that measured under the same conditions when using the above-defined conventional control yeast.

Indeed in these comparisons the control yeast must be under the same form than the new baker's yeast tested.

Preferably, the said total gas releases on the dough pieces are measured using the zymotachygraphe CHOPIN® during 2 hours and 30 minutes at 27°C and the proof times are measured at 35°C.

It is recalled that the proof time is according to the handbook of basic technical baking terminology by E.J. Pyler used as reference the length of time for which a moulded dough piece is held in the final proofer prior to baking so it can attain the desired degree of aeration or volume increase.

It is recalled that the zymotachygraphe CHOPIN® or CHOPIN® zymotachygraphe is a conventional apparatus known to those skilled in the art for measuring the gaseous release of a dough ball or piece. This apparatus is notably described in a detailed manner in chapter VII B "Appreciation du pouvoir fermentaire" (appreciation of the fermenting power), §6.5 "Le Zymotachygraphe" (CHOPIN, 1973), pages 461 to 463 in the manual "Guide pratique d'analyses dans les industries des céréales", B. Godon and W. Loisel, Technique et Documentation (Lavoisier) 1984, ISBN 2-85206-081-7 Collection 2-85206-230-5. The fermentometer of Burrows and Harrison is the object of §6.1 of this Chapter VIIB, pages 454 to 460.

STRAINS OF YEAST USED IN THE INVENTION

For the preparation of the new baker's yeasts according to the invention, it is possible to use two strains which were deposited on the 24th March 2000 according to the Budapest Convention with the "Collection Nationale de Cultures de Microorganismes" (CNCM), Institut Pasteur, 28 rue du Docteur Roux, 75724 PARIS CEDEX 15, FRANCE, under the numbers:

I-2421 (strain L17)

I-2422 (strain L35).

Different trials carried out with strain CNCM I-2421 cultivated according to a process with discontinuous inflow of molasses during the whole or part of the last cycle of multiplication, have led to frozen intermediate dry yeasts between 70 and 80 % dry matter, preferably between 72 and 78 % dry matter, giving the following gas releases in tests A_1, A_5, A_6 described in US patent No. 5,741,695:

test A_1 170 ml to 190 ml in two hours

test A_5 110 ml to 130 ml in two hours

test A_6 115 ml to 140 ml in two hours.

In these tests A carried out with frozen intermediate active dry yeasts, the 160 mg of yeast solid content (tests A_1 or A_5) or the 320 mg of yeast solid content (test A_6) of frozen intermediate dry yeast are thawed during one hour at room temperature before being mixed with the 15 ml of water as described column 5 of US patent No. 5,741,695.

These two strains CNCM I-2421 and I-2422 can be characterized using the identification technique of yeast strains using the Polymerase Chain Reaction and based on the amplification of the inter delta zones of the retrotransposon TY1, and which is disclosed in the Article "Identifications of Yeast Strains Using the Polymerase Chain Reaction" by F. Ness, F. Lavallée, D. Dubourdieu, M. Aigle and L. Dulau, published in J. Sci. Food Agric. 1993, 62, 89-94.

DESCRIPTION OF THE DRAWINGS

In that respect it appears from the single figure or figure 1 which shows in 1, 2 and 3 the electrophoresis profiles of amplified DNA sequences of strains L17 and L35 and a profile of digested DNA used as a molecular weight marker, that the strain L17 (CNCM I-2421) presents two supplemental bands with respect to the strain L35 (CNCM I-2422). Taking into consideration the above-indications, it appears that the invention relates as a new industrial product not only to the baker's yeasts here-above defined but also to the strains deposited under the numbers CNCM I-2421 and I-2422.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The invention also relates on the one hand to the use of the two strains CNCM I-2421 and CNCM I-2422 and on the other hand to the use of similar strains to these two strains, for the preparation of baker's yeasts according to the invention in the form of yeast creams, fresh compressed yeasts and active dried yeasts,

15. New baker's yeast strain obtained by clean inactivation of the PAD1 gene(s).

16. Process for the preparation of baker's yeasts comprising the use as starting strain of the strain deposited according to the Budapest Convention with the "Collection Nationale de Cultures de Microorganismes", Institut Pasteur, 28 rue du Docteur Roux, 75724 PARIS CEDEX 15, under the number I-2421.

17. . Process for the preparation of baker's yeasts comprising the use as starting strain of the strain deposited according to the Budapest Convention with the "Collection Nationale de Cultures de Microorganismes", Institut Pasteur, 28 rue du Docteur Roux, 75724 PARIS CEDEX 15, under the number I-2422.

18. Process for the preparation of baker's yeasts comprising the use as starting strain of one of the strains selected from the group of the strains similar to the two strains deposited according to the Budapest Convention with the "Collection Nationale de Cultures de Microorganismes", Institut Pasteur, Paris, under the numbers I-2421 and I-2422 and the baker's yeast strains obtained by clean inactivation of the PAD1 gene(s).

19. Process for the preparation of baker's yeasts according to [one of claims 16, 17 and 18] claim 16 wherein the said starting strain is cultivated according to a process comprising a discontinuous inflow of molasses during the whole or part of the last cycle of cultivation.

20. Process for the manufacture of bread-making doughs aromatized with cinnamon comprising the use of a new baker's yeast selected from the group consisting of the baker's yeasts having good general performance in not delayed bread-makings, resistant with respect to the stress caused by freezing when they are used in sweetened doughs, and not giving rise to the appearance of off-flavors in the presence of cinnamon or selected from the group consisting of the new baker's yeasts obtained by the process comprising the use as starting strain of one of the strains of the group comprising the strains deposited according the Budapest Convention with the "Collection Nationale de Cultures de Microorganismes", Institut Pasteur, 28 rue du Docteur Roux, 75724 PARIS CEDEX 15, under the numbers I-2421 and I-2422, and the similar strains to the said strains I-2421 and I-2422, and the baker's yeast strains obtained by clean inactivation of the PAD1 gene(s).

21. Process for the manufacture of frozen sweetened doughs pieces comprising the use of a new baker's yeast selected from the group consisting of the baker's yeasts having good general performance in not delayed bread-makings and resistant with respect to the stress caused by freezing when they are used in sweetened doughs, and not giving rise to the appearance of off-flavors in the presence of cinnamon or selected from the group consisting of the new baker's yeasts obtained by the process comprising the use as starting strain of one of the strains of the group comprising the strains deposited according to the Budapest Convention with the "Collection Nationale de Cultures de Microorganismes", Institut Pasteur, 28 rue du Docteur Roux, 75724 PARIS CEDEX 15, under the numbers I-2421 and I-2422, and the similar strains to the said strains I-2421 and I-2422, and the baker's yeast strains obtained by the clean inactivation of the PAD1 gene(s).

22. Process for the production of breadmaking doughs according to [one of claims 20 and 21] claim 20 wherein the new baker's yeast used is in the form of a frozen intermediate dry yeast product.

23. Process for the preparation of baker's yeasts according to claim 17 wherein the said starting strain is cultivated according to a process comprising a discontinuous inflow of molasses during the whole or part of the last cycle of cultivation.

24. Process for the preparation of baker's yeasts according to claim 18 wherein the said starting strain is cultivated according to a process comprising a discontinuous inflow of molasses during the whole or part of the last cycle of cultivation.

25. Process for the production of breadmaking doughs according to claim 21 wherein the new baker's yeast used is in the form of a frozen intermediate dry yeast product.